

New Firmware Information

Rev 1.00, 12-April-2010

* **SWR ACCURACY:** As a result of our continuing product improvement, a different algorithm is now used to calculate the SWR value. Besides offering greater accuracy at lower power levels, the SWR data available from the Serial Port now reports the range of 1.00:1 to 99.99:1, giving much finer resolution of SWR readings.

* **SWR ALARM CHANGES:** The trip points for the SWR Alarm now match the SWR LED's on the front panel of the W2. The range is still 1.1:1 to 5.0:1. Sending the W2 a "[" lowers the trip point, and "]" raises the trip point. Note the decimal point is implied in the serial response, i.e. "[25;" means the trip point was lowered to an SWR of 2.5:1 and "]40" means the trip point was raised to 4.0:1.

* **SWR ALARM RESPONSE TIME:** You can use the "PTT RY" RCA connectors on the back of the W2 to help protect your amp in case of high SWR. The response time that it takes for the relay to trip has been improved and can now catch an "I" sent at 60 WPM.

* **SERIAL COMMAND CHANGES:** The Serial Command set has had some minor changes in output format. Please see the "Elecraft W2 Serial Interface Commands" document available here on Elecraft.com.

Rev 0.96, 8-Feb-2010

* **SENSOR CALIBRATION ADJUSTMENT:** The Sensor "Calibration" range is now 350 to 650 (500 being the factory default). This provides a very wide range for matching our sensors to any reference you already have.

* **SENSOR CALIBRATION VALUES AVAILABLE:** The six possible types of sensor calibration values are available from the serial port. Send the W2 a "?" and the data returned is a series of six numbers. The values, in order, are Sensor1 HF 200W, Sensor1 HF 2KW, Sensor1 VHF, Sensor2 HF 200W, Sensor2 HF 2KW, Sensor2 VHF.

* **SWR ALARM LEVEL NOW ADJUSTABLE:** You may set the trip point for the SWR Alarm from 1.1:1 to 5.0:1. Sending the W2 a "[" lowers the trip point, and "]" raises the trip point in 0.1 steps. Note the decimal point is implied in the serial response, i.e. "[25;" means the trip point was lowered to an SWR of 2.5:1 and "]39" means the trip point was raised to 3.9:1.

* **THREE SENSOR SCAN MODE IMPROVEMENTS:** 1. Initiating or stopping the W2 Sensor Scan mode by holding the front panel "Sensor" button is now visually confirmed by lighting or extinguishing both of the S1 & S2 LEDs. 2. A noticeable delay of the W2 in responding to the active sensor has been eliminated. 3. This mode is now also saved in EEPROM and will return to scanning at power up.

Rev 0.95, 21-Jan-2010

* **ADDITIONAL CALIBRATION COMMANDS:** You may now use the “<” and “>” characters when calibrating your W2 Sensor. The “>” character increases the calibration value by 5, and the “<” reduces the calibration value by 5.

* **ALARM CONDITION RESET VIA SOFTWARE:** The High SWR Alarm condition (W2 stops with flashing SWR LED's) may be reset via software. Send the W2 either a “C” or “c” to clear the alarm. Software can also be used to detect an Alarm condition by sending the W2 an “I”/”i”. If it is in the Alarm state, the response will only be the character “A!”.

* **AUTO RANGE MODE IMPROVEMENTS:** This version includes the most significant improvements yet to stabilize the Auto Range mode.

* **SO2R OPERATION WITH TWO SENSORS:** If you are using two sensors connected to one W2 in an SO2R arrangement, the W2 can now monitor them both and lock on the one detecting RF. To use this feature either press and hold the front panel “Sensor” button for three seconds, or send the W2 either a “y” or “Y”. The W2 indicates it is in SO2R mode by lighting only the two “S1/S2” LED's while no RF is detected. While one Sensor is active, you can change the range and decay speeds as desired. The W2 reverts to normal operation if any button is pressed (while scanning) or it receives another “Y” or “y” serial command.

* **2KW HF SENSOR SERIAL DATA:** The decimal point function for Reflected Power was incorrect when the measured Forward Power was above 20 watts (value sent was too high). Now corrected.

Rev 0.94, 21-Dec-2009

* **VHF SENSOR SERIAL DATA:** The decimal point function in the 200W Manual Range did not shift when the measured power dropped below 20 watts. Now corrected.

Rev 0.93, 18-Dec-2009

* **TWO VHF SENSOR ISSUES:** 1. No response at all in Auto mode, 2. Occasionally a long, slow, flickering decay could be seen: Both of these issues are now fixed.

* **ALARM SETTING:** The SWR Alarm setting (On/Off) is now saved in EEPROM, so an “A” command remains as you last set it when the W2 is powered back on.

Rev 0.92, 15-Dec-2009

* **SWR LED's FLASH RANDOMLY WHEN A SENSOR IS CONNECTED:** This turned out to be caused by corrupted data in EEPROM. This version checks for this and will correct it by restoring the data to default settings.

* **SENSOR CALIBRATION VALUES EXPANDED:** The calibration data for the Sensors is now saved by both Sensor type and the connector used by the Sensor. Among other benefits, this allows you to calibrate two of the same type of Sensors independently.

* **FURTHER IMPROVEMENTS IN “AUTO” RANGE DISPLAY:** We are continuing to improve the LED display in the “Auto” mode. In addition to editing algorithms, we are setting the LED and Serial Data Output modes to default as PEP, rather than Average Power. This can be changed at any time using the “M” (LED’s) and “N” (Serial Data) commands.

Rev 0.91, 20-Nov-2009

* **MISC IMPROVMENTS:**

1. SWR LED’s: Never indicated down to 1.0:1. Now corrected.
2. PEAK HOLD LED: Erratic response in Auto range mode corrected.

Rev 0.90, 18-Nov-2009

* **MISC IMPROVMENTS:**

1. Mode of PK-HOLD LED was not being saved to EEPROM if set via front panel push buttons. It was saved if it was set via the Serial “P/p” command. Either way, it’s now fixed.
2. Power-up from loss of +12 acted differently from power-off via “On/Off” button. Now the W2 will always power-up with the full LED and Alarm relay test.
3. SWR LED Bargraph unusually sensitive. In SO2R stations with two W2’s, the idle W2’s SWR Bargraph could have indicated a high SWR condition due to detection of only reverse power sent back down the Sensor from the 2nd xmitter. SWR display threshold based on Forward Power was raised to correct this.
4. Serial port would not respond to first command after power-up. Now fixed.
5. A serial “F/f” or “R/r” command sent immediately after power-up but before feeding any RF through a Sensor would make the W2 appear to reset itself. Also fixed.

Rev 0.89, 06-Nov-2009

* **SWR LED’s ONLY FLASH WHEN ALARM OPTION ENABLED:** The SWR LED’s will not flash at high SWR levels unless the Alarm option is enabled (by sending the W2 an ASCII “A” (or “a”)).

* **ALARM RELAY TEST ADDED TO POWER-ON LED TEST:** Now when the W2 is powered on you should hear the Alarm relay click on and off during the two Left-Right LED bar graph tests.

* SENSOR MODEL DETECTION IMPROVED: When a Sensor is connected to the W2 display box, the W2 determines what type of sensor it is via one of the wires in the sensor cable. This process has been enhanced to provide better noise immunity.

Rev 0.88, 29-Oct-2009

* ALARM LOCK NOW DEFAULTS TO NON-LOCKING: The Alarm function at Power-up always defaults to a “non-locking” mode. When the SWR level exceeds 3.0:1 or higher, it only flashes. To change this to a locking type Alarm, send the W2 an ASCII “A” (or “a”). The setting is **not** saved in EEPROM.

* SWR “jump” FIXED: At certain lower power levels, the SWR value became “jumpy” (going from 1.0:1 to >4.0:1 with only a fractional increase in power or SWR). This has been fixed.

* DETECTION OF TWO SENSORS FIXED: Version 0.87 of the Firmware that saves the settings of both sensors was not working correctly. Now fixed.

* SERIAL COMMAND SET UPDATED: The W2 Serial Command table has had a complete overhaul. A document of these changes will be available soon.

Rev 0.87, 21-Oct-2009

* DETECTS CHANGE OF SENSOR AT POWER-UP: Before, changing the Sensors while the W2 was off was not noticed on Power-up. Only the last saved settings would be restored, which could have resulted in Sensors reading the wrong calibration tables. Now the W2 compares the Sensors with their last known model and if it has changed, reevaluates the Sensor to learn the new model.

Rev 0.86, 19-Oct-2009

* CALIBRATION TABLE FOR THE 2KW HF SENSOR UPDATED: The 2KW HF table was remade using the latest 2KW rated toroids.

Rev 0.85, 15-Oct-2009

* FIRST VERSION RELEASED IN FIELD TEST UNITS.